



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,181	11/14/2006	Kenji Koishi	YAMAPI002US	6738
51921 7590 08/16/2010 MARK D. SARALINO (PAN) RENNER, OTTO, BOISSELLE & SKLAR, LLP 1621 EUCLID AVENUE 19TH FLOOR CLEVELAND, OH 44115				
EXAMINER CHU, KIM KWOK				
ART UNIT 2627		PAPER NUMBER		
MAIL DATE 08/16/2010		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/567,181

**Applicant(s)**

KOISHII, KENJI

**Examiner**

Kim-Kwok CHU

**Art Unit**

2627

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Remarks filed on June 21, 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/14/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2627

**Claim Rejections - 35 USC § 112**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

*The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.*

2. Claims 5, 6, 7, 17, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 5, line 11, the phrase " $\alpha(v)$  denotes a function of the linear velocity" is vague because the function is not completely expressed. In other words, the feature "a function of the linear velocity" is unknown with respect to some unknown variables which can give the claimed equation Pm.

Similarly, in each of Claims 6, 7, the phrase " $\alpha(v)$  denotes a function of the linear velocity" is vague because the function is unknown with respect to some unknown variables which can give the claimed equation Pm.

In addition, in each of Claims 17, 18 and 19, the phrase " $\beta(v)$  denotes a function of the linear velocity" is vague because the function is unknown with respect to some unknown variables which can give the claimed equation Pm.

Art Unit: 2627

**Claim Rejections - 35 USC § 102**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

4. Claims 1-4, 8-16 and 20-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by Toda et al. (U.S. Patent 5,642,343).

Toda teaches an information recording method having all of the steps as recited in claims 1-4, 8 and 9. For example, Toda teaches the following:

Regarding Claim 1, the information recording method comprising the steps of: (a) generating a pulse train (Fig. 3b) including a first pulse (Fig. 3b; one of middle pulses of the second pulse in the pulse train) and a second pulse (Fig. 3b; one of front pulses of the second pulse in the pulse train) forming at least one of a recording mark 23 (Fig. 3c) and a space onto an information recording medium 101 (Fig. 1) by irradiating the pulse train onto the information recording medium 101 (Fig. 1) while rotating the information recording medium 101 at a certain linear velocity (recording liner

Art Unit: 2627

velocity), wherein the first pulse (one the middle pulses) is a pulse for forming a central portion of the recording mark 23 (Fig 3b; a mark is formed by a plurality of pulses), among the recording mark and the space (at least one of the plurality pulses forms the middle portion of a mark), the second pulse (Fig. 3b; one of the pulses (a front/back pulse) is a pulse forming a portion other than the central portion (leading or trailing) of the recording mark, among the recording mark and the space, and the step (a) includes a step of determining a power level (Fig. 3b;  $P_w$ ,  $P_{as}$  or  $P_r$ ) of the first pulse in accordance with the linear velocity and a power level of the second pulse (Figs. 8 and 27; column 20, equations 10 and 11).

Regarding Claim 2, the second pulse includes a third pulse for forming at least one of a leading portion of the recording mark and a trailing portion of the recording mark (Figs. 3b), and a power level of the first pulse becomes equal to a power level of the third pulse in accordance with an increase in the linear velocity (Fig. 3b; several pulses are equal in power levels).

Regarding Claims 3 and 4, the second pulse includes a third pulse for forming one of a leading portion of the recording mark and a trailing portion of the recording mark, and a power level

Art Unit: 2627

of the third pulse is greater than a power level of the first pulse (Fig. 11).

Regarding Claim 8, the power level of the first pulse is determined in accordance with only the power level of the second pulse (Fig. 3c; all pulses are in a same pulse train with related power levels) when the linear velocity is at least one of near maximum linear velocity and near minimum linear velocity (test writing is determined under a rotating recording medium).

Regarding Claim 9, the power level of the first pulse is determined in accordance with only the power level of the second pulse (Fig. 3c; all pulses are in a same pulse train with related power levels) when the linear velocity is near intermediate linear velocity and near minimum linear velocity (test writing is determined under a rotating recording medium within a range of rotating speed).

Art Unit: 2627

5. Apparatus claims 10 and 11 are drawn to the apparatus corresponding to the method of using same as claimed in claims 8. Therefore apparatus claims 10 and 11 correspond to method claims 1 and 8, and are rejected for the same reasons of anticipation as used above. Claim 10 however also recites the following limitation which are also taught by the prior art of Toda:

Regarding Claim 10, the information recording medium has an area (recording mark) on which the power level of the first pulse is recorded (Figs. 3a-3c; the location of recording a mark is the area representing the power level of the first pulse).

6. Apparatus claim 12 is drawn to the apparatus corresponding to the method of using same as claimed in claim 1. Therefore apparatus claim 12 corresponds to method claim 1, and is rejected for the same reason of anticipation as used above.

7. Claims 13-16, 20 and 21 have limitations similar to those treated in the above rejection, and is met by the references as discussed above.

Art Unit: 2627

8. Toda teaches an information recording medium having all of the elements and means as recited in claims 22-24. For example, Toda teaches the following:

Regarding Claim 22, the information recording medium for recording information (Fig. 1), wherein: at least one of a long recording mark (Fig. 3c), a short recording mark (Fig. 3c) and a space is formed onto the information recording medium 101 (Fig. 1) by irradiating a pulse train onto the information recording medium while rotating the information recording medium at a certain linear velocity (Fig. 1), the pulse train includes a first peak pulse and a second peak pulse (Fig. 3b), the first peak pulse is a pulse for forming the short recording mark and the second peak pulse is a pulse for forming the long recording mark (Figs. 3a-3c; different marks are formed by the pulses), a power level of the first peak pulse is determined in accordance with the linear velocity and a power level of the second peak pulse (Fig. 28), and the information recording medium has an area on which the power level of the first peak pulse is recorded (Figs. 3a-3c; the location of recording a mark is the area representing the power level of the first pulse).

Regarding Claim 23,  $\beta(v)$  is recorded in the area, and  $\beta(v)$  denotes a relationship between the linear velocity, the power level of the first peak pulse and the power level of the



Art Unit: 2627

second peak pulse.

9. Claim 24 have limitations similar to those treated in the above rejection, and is met by the references as discussed above.

***Allowable Subject Matter***

10. Claims 5, 6, 7, 17, 18 and 19 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

Regarding Claim 5, the prior art of record fails to teach or fairly suggest that the power level of the first pulse is determined in accordance with the following formula:

$$P_m(v) = \alpha(v) \times (P_p - P_e) + P_e,$$

the second pulse includes a third pulse for forming at least one of a leading portion of the recording mark and a trailing portion of the recording mark and a fourth pulse for forming the space, where  $P_m$  denotes the power level of the first pulse,  $\alpha(v)$  denotes a function of the linear velocity,  $P_p$

Art Unit: 2627

denotes a power level of the third pulse, and  $P_e$  denotes a power level of the fourth pulse, and the power level of the third pulse is greater than the power level of the first pulse.

Regarding Claim 6, the prior art of record fails to teach or fairly suggest that the power level of the first pulse is determined in accordance with the following formula:

$$P_m(v) = \alpha(v) \times P_e,$$

the second pulse includes a fourth pulse for forming the space, and where  $P_m$  denotes the power level of the first pulse,  $\alpha(v)$  denotes a function of the linear velocity, and  $P_e$  denotes a power level of the fourth pulse.

Regarding Claim 7, the prior art of record fails to teach or fairly suggest that the power level of the first pulse is determined in accordance with the following formula:

$$P_m(v) = \alpha(v) \times P_p,$$

the second pulse includes a third pulse for forming at least one of a leading portion of the recording mark and a trailing portion of the recording mark, where  $P_m$  denotes the power level of the first pulse,  $\alpha(v)$  denotes a function of the linear velocity, and  $P_p$  denotes a power level of the third pulse, and the power level of the third pulse is greater than the power level of the first pulse.

Regarding Claim 17, the prior art of record fails to teach

Art Unit: 2627

or fairly suggest that the power level of the first peak pulse is determined in accordance with the following formula:

$$Pps = \alpha(v) \times Ppl,$$

wherein Pps denotes the power level of the first peak pulse,  $\alpha(v)$  denotes a function of the linear velocity, and Ppl denotes the power level of the second peak pulse.

Regarding Claim 18, the prior art of record fails to teach or fairly suggest that the Power level of the first peak pulse is determined in accordance with the following formula:

$$Pps = \alpha(v) \times (Ppl - Pe) + Pe,$$

wherein Pps denotes the power level of the first peak pulse,  $\alpha(v)$  denotes a function of the linear velocity, Ppl denotes the power level of the second peak pulse, and Pe denotes a power level of the pulse for forming the space.

Regarding Claim 19, the prior art of record fails to teach or fairly suggest that the power level of the first peak pulse is determined in accordance with the following formula:

$Pps = \alpha(v) \times Ppl + Ppl$ , wherein Pps denotes the power level of the first peak pulse,  $\alpha(v)$  denotes a function of the linear velocity, and Ppl denotes the power level of the second peak pulse.

The features indicated above, in combination with the other

Art Unit: 2627

elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

### ***Response to Remarks***

12. Applicant's Remarks filed on June 21, 2010 have been fully considered but they are not persuasive.

With respect to the rejection of Claims 5-7 and 17-19 under 35 USC § 112 2<sup>nd</sup> paragraph, Applicant states that the function " $\alpha(v)$ " which denotes a function of the linear velocity is clear because Applicant is entitled to claim the invention as broadly as the prior art permits (page 3 of the Remarks, second paragraph). Accordingly, the claimed " $\alpha(v)$ " can be broad, however, the equation  $P_m$  should be written to  $P_m(v)$  accordingly because  $P_m$  depends on the variable " $v$ ". On the other hand, the claimed " $\alpha(v)$ " is not a function but a coefficient/constant in the claimed expression  $P_m = \alpha(v) \times (P_p - P_e) + P_e$ .

With respect to the rejection of Claims 1-4, 8-16 and 20-24 under 35 USC § 102(b), Applicant states the prior art of Toda (U.S. Patent 5,642,343) does not teach the claimed "determine a power level of the first pulse" (page 4 of the Remarks, last paragraph). Accordingly, in Toda's Fig. 3b, recording pulses are determined (set) at  $P_w$ ,  $P_{as}$  and  $P_r$  along a time axis. In other words, any single pulse in the pulse train is set to a

Art Unit: 2627

specific power level such as Pw, Pas or Pr. Furthermore, the power level and duration of each pulse is set (determined) along a time axis in order to form a mark of specific length in a rotating medium. In such case, each recording pulse within the pulse train is determined under a specific liner velocity (recording velocity) with respect to each others so that to form the correct mark length. In other words, The prior art of Toda teaches Applicant's claimed features such as "determining a power level of a first pulse using liner velocity and "power level of a first pulse is determined in accordance with linear velocity and a power level of the second pulse".

**13. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2627

14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/  
Examiner AU2627  
August 2, 2010  
(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627